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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,068	07/26/2001	Wen-Yen Hwang	PAT030	6245
27543	7590	06/17/2004	EXAMINER	
APPLIED OPTOELECTRONICS, INC. 13111 JESS PIRTLE BLVD. SUGAR LAND, TX 77478			RODRIGUEZ, ARMANDO	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/917,068

**Applicant(s)**

HWANG ET AL.

**Examiner**

ARMANDO RODRIGUEZ

**Art Unit**

2828

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13, 16, 17, 20, 21 and 24-36 is/are pending in the application.  
4a) Of the above claim(s) 1-10 and 24-36 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 11-13, 16, 17, 20 and 21 is/are rejected.  
7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

Claims 1-13,16,17,20,21,24-36 are pending.

Claims 1-10,24-36 have withdrawn.

Claims 14,15,18,19,22,23 have been canceled.

The 35 USC 112 second paragraph rejection of claims 11-23 has been withdrawn based on applicant's amendment filed on March 31, 2004.

### ***Response to Arguments***

Applicant's arguments with respect to claims 11,12,20,21 have been considered but are moot in view of the new ground(s) of rejection. The rejection of claims 11,12,20,21 are withdrawn based on applicant's amendment and arguments. However, upon further consideration, a new ground(s) of rejection is made in view of Mukaihara et al.

Applicant has amended the claims to invoked the 35 USC 112 six paragraph means-plus-function and has directed the examiners attention to the structure disclosed in the specification and equivalents thereof, as such the examiner has withdrawn the rejection based on Kish Jr. et al and has further conducted a new search for teachings of similar or equivalent structure as described in the specification of the present application and in accordance with the 35 USC 112 six paragraph.

### ***Claim Objections***

Claims 11-13,16,17,20 and 21 are objected to because of the following informalities: applicant's use of "anti-reflection" is not consistent with the known

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meaning within the art, furthermore the drawings illustrate reflection of the beam.

Appropriate correction is required.

Claims 13,16,17 are objected to because of the following informalities: applicant has amended the claims to invoke 112 six paragraph means-plus-function, however claims 13,16 and 17 continue to make reference to the deleted term "features".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11,13,16,17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mukaihara et al (PN 6,545,296) in view of Gaylord et al.

Regarding claims 11 and 20,

In figure 6A Mukaihara et al illustrates a semiconductor emitting laser for optical communications having a substrate (100), where the substrate includes a surface (100a) having continuous and unevenness which provides diffused reflection, as described in column 5 lines 7-10.

Mukaihara et al does not explicitly describe a VCSEL.

However, VCSEL are semiconductor lasers, which are notoriously well known in the art and have become the dominant light source for optical communications.

Therefore, it would have been obvious to one of ordinary skill in the art to provide a surface disposed on the substrate of a VCSEL, as disclosed and illustrated by Mukaihara et al, because it will redirect the laser beam away from the active layer to provide stable operation, as disclosed in column 3 lines 3-16 and in the abstract.

Regarding the array of claim 20, in accordance with *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.), as in the present case the mere duplication of lasers does not provide a new or unexpected result since both prior art and the application will provide an output laser beam.

Regarding claims 12 and 21,

Mukaihara et al does describe a surface (100a) having continuous and unevenness, which provides diffused reflection and resembles an equivalent structure as described in applicant's specifications.

Regarding claims 13,16,17,

The use of different etching techniques to obtain a structure, which provides scattering on different materials as dielectrics, semiconductors and metals is notoriously well known in the art, as described by Gaylord et al in the abstract.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

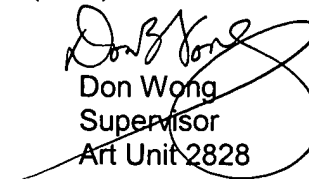
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DON WONG can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
ARMANDO RODRIGUEZ  
Examiner  
Art Unit 2828

  
Don Wong  
Supervisor  
Art Unit 2828

AR/DW